

IN THE CLAIMS:

Please amend the claims as follows.

B' 15. (Cancelled) A process for introducing functionality to the surface of a porous article, comprising the steps of:

providing a precursor porous article having an exterior surface, an interstitial surface and a bulk matrix, the surfaces and bulk matrix both comprising organic polymers; and

exposing the precursor porous article to a remote discharge formed by radical forming conditions acting on a source gas, the source gas selected from the group consisting of oxygen, ammonia and a mixture of nitrogen and hydrogen, under reaction conditions such that radicals from the discharge react with the organic polymers present at the exterior and interstitial surfaces of the precursor porous article to introduce direct covalent bonding of functionality to the surfaces, the functionality selected from the group consisting of amino, hydroxyl, carbonyl and carboxyl groups.

16. (Currently amended) The process according to claim 27 ~~45~~ wherein the discharge is a remote plasma discharge.

17. (Currently amended) The process according to claim 27 ~~45~~ wherein ultraviolet radiation generated by the radical forming conditions does not contact the precursor porous article.

18. (Currently Amended) The process according to claim 27 ~~45~~ wherein the source gas comprises ammonia.

19. (Currently amended) The process according to claim 27 ~~45~~ wherein the source gas comprises oxygen.

20. (Currently amended) The process according to claim 27 ~~45~~ wherein the porous article comprises polyolefin.

21. (Currently amended) The process according to claim 27 ~~45~~ wherein the precursor porous article has a pore volume which is within 10% of the pore volume of the surface-functionalized porous article.

22. (Currently amended) The process according to claim 27 ~~45~~ wherein the ~~surface-functionalized~~ porous article is reacted with a reducing agent, so that hydroxyl groups are the predominant functional group bonded to the polymers which form the surface of the article.

B 23. (Currently amended) The process according to claim 27 ~~45~~ wherein precursor porous article is exposed to the remote discharge under a pressure of about 1 to about 10 Torr.

24. (Currently amended) The process according to claim 27 ~~45~~ wherein the functionality is distributed across the entire exterior and interstitial surfaces.

25. (Currently amended) The process according to claim 27 ~~45~~ further comprising the step of treating the functionalized surface with a chemical agent that eliminates surface free radicals or organic peroxides.

26. (Cancelled) The process according to claim 25 wherein the agent is selected from the group consisting of ammonia gas, dimethyl sulfide, a hindered amine light stabilizer, BHT and antioxidants.

27 (New) A process for introducing pore surface functionality to a porous article, comprising the steps of:

providing a precursor porous article having an exterior surface, an interstitial surface and a bulk matrix, the exterior and interstitial surfaces and bulk matrix both comprising organic polymers, the porous article having an interconnected network of open pores, the open pores having pore surfaces extending from interior portions of the porous article to the exterior surface of the porous article and having exterior pore surfaces consisting of pore surfaces opening directly to the macroscopic external surface of the porous article, and having interstitial, internal pore surfaces interior to the porous article and contiguous with the exterior pore surfaces; and

B exposing the precursor porous article to a flowing gas containing reactive atomic or molecular radicals, said radicals being produced by a flow of a source gas through a discharge region, spaced from the porous article, within which is a microwave, radiofrequency, or direct current gaseous discharge, the source gas being selected from the group consisting of oxygen, ammonia, carbon dioxide, nitrogen, hydrogen, or mixtures thereof, the gaseous flow being maintained such that atomic or molecular radicals are formed in the gaseous discharge and flow to the porous article in sufficient quantity that radicals from the discharge react with the organic polymers present at the exterior and interstitial surfaces of the precursor porous article to introduce direct covalent bonding of functionality to the surfaces, the functionality selected from the group consisting of amino, hydroxyl, carbonyl and carboxyl groups, and sufficient to introduce between 1×10^{-4} and 1×10^{-6} micromoles of reactive functionality per square cm of pore surface,